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The End Of Daily Insulin Injections for Type 1 Diabetics?

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Watching episodes of 'Star Trek', more years ago than I care to remember, I was always fascinated when 'Bones' (Doctor McCoy) gave crew members medication by a painless, needle-less injection. I wondered whether, one day, it could become a reality. Well it seems like that day has almost arrived and that one of the first groups of patients to benefit could be people with type 1 diabetes who need to inject insulin.

A new, nanotechnology-based technique, under development at the University of North Carolina, could allow diabetes patients to regulate their blood sugar by releasing insulin painlessly using a small ultrasound device¹. So far, this new technology has only been tested on mice, but it holds the promise of a clinical application being available within a few years.

The details are quite complex but basically involve injecting a solution into the skin that contains positively and negatively charged nanoparticles filled with insulin. The particles are attracted to each other by electrostatic force to form a 'nano-network'. The insulin starts to diffuse out of the particles, but is held in the bottom layer of the skin by the same electrostatic force, forming a 'reservoir' of insulin ready to be delivered into the bloodstream. This last step is achieved by the patient applying a short, focused pulse of ultrasound to the skin – the needle-less injection.

The 'nano-network' would probably contain enough insulin to last around 10 days, at which point a new injection of insulin-filled nanoparticles would be needed. The old nanoparticles, being made of harmless, natural substances, are broken down and absorbed by the body within a few weeks.

Of course, there are still a lot of question marks over this proposed new method of delivering insulin medication. How will the accuracy of the insulin dose be assured? How will accidental overdoses be prevented? Will injecting the nano-networks cause some people to develop a skin reaction? If these and other potential problems can be overcome, though, this new technique could mean that type 1 diabetes patients only have to use a skin-prick type needle every 10 days or so, instead of giving themselves painful injections a few times a day.

What you can do right now to reduce your insulin requirement

As I said, it will probably be a few years before this new technique becomes available to patients. Even then, it will only provide an easier way for people with type 1 diabetes to get their insulin, it won't do anything to reduce their insulin requirement or combat the complications of the condition. But, as I have stressed in earlier posts, there are several steps that people with type 1 diabetes can take to improve their health and reduce their risks, right now.

- To recap, type 1 diabetes is an autoimmune condition in which the body's immune system destroys the insulin-producing cells of the pancreas.
- However, most type 1 diabetics retain some beta cell function and still produce small amounts of insulin. These people may be able to prevent further damage to their beta cells and even encourage them to regenerate and produce more insulin.
- The right diet is crucial. Following a low GL diet could allow you to cut back your injected insulin by as much as 50 per cent and benefit from reduced risks of cancer and heart disease as a bonus.
- However, any changes to your diet should be made gradually and carefully. More information on how to

accomplish this safely can be found [here](#):

- Oily fish, leafy green vegetables, berries, seeds, garlic, mushrooms, oats and green tea will all support healthy immune function and may help reduce the auto-immune attack on your beta cells.
- A multivitamin and mineral supplement, a vitamin B complex that gives you 100 mg of [thiamine](#) and a [vitamin D3](#) supplement of 4000 IU a day may also help
- Gymnema, fenugreek and Pterocarpus marsupium are herbs that have been used for centuries in India as traditional remedies for diabetes. Recent studies have shown that they can help the beta cells to regenerate. [Further details can be found here](#).

A healthy diet, regular exercise, enough sleep and the judicious use of certain nutritional and herbal supplements can do a lot to improve blood sugar metabolism. But what about the effects on your blood sugar from unseen enemies – the synthetic chemicals that pollute our environment and are a part of daily life for all of us. In my next blog post I shall tell you how a group of chemicals used in food wrappings, waterproofers, stain-resistant coatings and even dental floss are linked with diabetes.

Wishing you the best of health,

Martin Hum
PhD DHD Nutritionist
for Real Diabetes Truth



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***"...please keep up the good work because what you say I now know to be very true. At last someone that knows what they're talking about, for a change. THANK YOU."* – Roy Redfern**

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References

1. Di J, Price J, Gu X, Jiang X, Jing Y, Gu Z. Ultrasound-triggered regulation of blood glucose levels using injectable nano-network. Adv Healthc Mater. 2013 Nov 19 (Online ahead of print).



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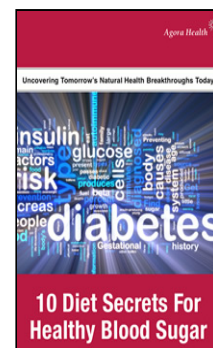
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